Executive Policy Seminar Series
Capital Markets Research Center

Why Private Pensions Matter to the Public Capital Markets

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Chief Economist and Director of the
Office of Economic Analysis
U.S. Securities and Exchange Commission

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Welcome

Thank you for joining us for our Fall Executive Policy Seminar. As many of you know, I became Director of the Capital Markets Research Center on August 1 of this year, succeeding Professor David Walker who served as founder and Director of the Center for the past 17 years.

It is with great pleasure that I introduce our speaker for tonight, Dr. Chester Spatt. Dr Spatt joined the Securities and Exchange Commission as Chief Economist in July 2004. He is the Mellon Bank Professor of Finance at the Tepper School of Business at Carnegie Mellon University and Director of its Center for Financial Markets. He has taught at Carnegie Mellon since 1979.

Professor Spatt earned his Ph.D. in economics from the University of Pennsylvania and his undergraduate degree is from Princeton University. He is a well-known scholar studying financial economics with broad interests in financial markets. Dr. Spatt has analyzed extensively market structure, pricing and valuation, and the impact of information in the marketplace. For example, he has been a leading expert on the design of security markets in various settings, mortgage valuation, and taxation and investment strategy. His co-authored 2004 paper in the Journal of Finance on asset allocation won TIAA-CREF's Paul Samuelson Award for the Best Publication on Lifelong Financial Security.

Professor Spatt has served as Executive Editor and one of the founding editors of the Review of Financial Studies, President and a member of the Founding Committee of the Society for Financial Studies, President of the Western Finance Association, and is currently an Associate Editor of several finance journals. He also has served as an expert for the Federal Energy Regulatory Commission (FERC) in its investigation of market manipulation in the Western energy markets in 2000 and 2001.

I am very pleased to welcome Dr. Chester Spatt.

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It's a great pleasure to speak at an Executive Policy Seminar organized by the Capital Markets Research Center of the McDonough School of Business at Georgetown University. I'd like to thank the Center's new Director, Lynn Doran, for the invitation to speak this evening and providing me the opportunity to address the importance of several aspects of defined-benefit pension plans for the public capital markets. This is a broad ranging and important issue to our society with a variety of policy dimensions and happens also to at least indirectly build upon my expertise as an academic expert on asset allocation and taxes. At the onset of my remarks I should emphasize, that while some of the views expressed here may reflect the work that my SEC economics colleagues and I have done to identify and evaluate areas in which accounting could make more effective use of financial economics principles and market solutions, the views and perspectives that I am expressing today are my own and not those of the Commission or my colleagues on the SEC staff.

The pension issue and especially the tremendous funding crisis has been the subject of considerable commentary and concern in

recent years. This is a consequence of a range of factors including the increasing recognition of the under-funding of many major corporate defined-benefit pension plans, the risk structure of the investments in these plans, the termination of some highly visible plans and concerns about the financial viability of the Pension Benefit Guaranty Corporation (PBGC). In my remarks I'd like to focus upon the economic aspects of pensions including the funding decisions, asset allocation choices, termination decisions, and finally the importance of disclosures and the associated awkwardness of the current disclosure regime. As an economist, I observe that many of the valuation notions and perspectives used in pension regulation are at odds with practices found elsewhere in financial markets and are not in accord with standard financial economics principles.

Funding and Asset Allocation Decisions

While the funding and asset allocation decisions for corporate pension plans are made by the employer corporation that is the plan sponsor, the consequences of these decisions also are borne by the employee beneficiaries of the plan and by the PBGC, which provides a guarantee through which for terminated plans it makes up shortfalls subject to statutory benefit ceilings and potentially subject to limits on its resources.[1] That the consequences of under-funding and risky asset allocation choices are borne (at least in part) by parties other than the decision-maker leads to the incentive conflict that economists characterize as "moral hazard."[2] From this moral hazard perspective the plan sponsor has an incentive to under-fund the plan to the extent permissible and to assume considerable investment risk, because the sponsor need not make up any short-fall that arises if the funding of the plan turns out to be inadequate provided the sponsor terminates the plan in bankruptcy.[3] On the other hand, if the investment choices of the pension plan are especially fruitful, then the sponsor is able to reduce its future contributions to take advantage of its superior performance.[4] It is arguably a situation from the perspective of the sponsor in which "heads, the sponsor wins, and tails, the taxpayer loses."

As a benchmark, I'd like to identify parallel decisions for self-directed defined contribution plans such as IRA, Keogh and 401k plans. In these contexts the beneficiary makes a personal investment decision, bearing the full consequences of his choice. This eliminates

the sources of incentive conflict between the beneficiary, plan sponsor and the PBGC. Given the tax advantages of investing through such plans, making the maximum possible contributions is optimal absence strong liquidity constraints, as pointed out in my 2004 Journal of Finance paper with Robert Dammon and Harold Zhang. More fundamentally, we established that from a tax perspective it is optimal for the employee to hold only bonds in the tax-deferred account if the investor has access to sufficient liquidity in his taxable account and can hold his entire desired exposure to equity in that taxable capacity.[5] This is exactly parallel to the insight originally developed for defined-benefit pension plans by Fischer Black (1980) and Irwin Tepper (1981) that the optimal holdings in the tax-deferred account are only bonds provided that the firm can adjust its equity ownership to the optimal level in the firm's own taxable account. By holding heavily-taxed assets in the tax-sheltered account the sponsor maximizes the potential tax advantage. Of course, as we have observed in recent years the possibility of default by the corporate pension plan also has an important impact upon the contribution and asset allocation decisions of the sponsor. The observed under-funding and heavy reliance upon equity investments suggests that exploiting the default option has considerable value-otherwise, why forego much of the tax benefits identified by Black (1980) and Tepper (1981)?[6]

Moral Hazard and Plan Termination

The moral hazard aspects of the firm's funding and asset allocation decisions are extremely important. Within some constraints the plan sponsor possesses discretion as to the funding of the plan and asset allocation of plan holdings. The prospect of default, especially through bankruptcy, creates the incentive to under-fund the pension plan and engage in relatively risky investments that drive up the plan's expected returns. Recall that the costs of poor returns in the event of default would be borne by the plan beneficiaries and the PBGC. Notice that the traditional tax incentives run counter to this perspective. In the absence of moral hazard, the ability to engage in tax arbitrage would lead the plan sponsor to purse an optimum strategy of over-funding the plan (within permissible limits) and owning heavily taxed assets such as bonds.

The problem of moral hazard becomes most apparent when market conditions lead a company to face a high chance of filing for bankruptcy and potential plan termination. The default option to which I just referred has its greatest effect on asset allocation in that setting: the sponsor's incentive is to make small contributions and risky asset allocations. Interestingly, the opposite incentives apply if the chance of a bankruptcy filing and related plan termination are low. In that setting, the value of the option due to the PBGC guarantee is low, so maximizing the tax benefits would be the dominant effect-which encourages the sponsor to maximize its contributions and invest in heavily-taxed assets. This economic perspective on the implications of moral hazard and tax incentives for pension finance appears to have considerable practical relevance and is, indeed, empirically testable. For example, it suggests that the plans that are relatively under-funded make low pension contributions relative to the size of the plan and will tend to use aggressive asset allocations (here the bankruptcy/termination option predominates) and firms with heavily-funded plans invest in assets with low risk and may make relatively larger contributions as these sponsors will tend to focus upon maximizing the tax benefits.[7] Because bankruptcy is important to exercising the termination option, these predictions can be tied to the firm's indebtedness, credit ratings and overall capital structure.

Many plan sponsors have interpreted their payment of an insurance premium to the PBGC as evidence they bear the full cost of the guarantee that the PBGC provides. It is interesting to observe that the current premia are a tiny fraction of the current obligations for plans that have recently terminated, suggesting that the level of premia is too low for at least some firms. In addition and more fundamentally, the premium that sponsors pay does not depend on the risk of the pension plan to the PBGC, which is reflected in its asset allocation policy and in the extent to which the plan is under-funded or over-funded. The absence of a risk-based premium is at the heart of the moral hazard problem. That is, if the guarantee were fully priced in a fashion consistent with the plan's actual default risk[8] under the auxiliary assumption that said risk is measurable and observable and that said costs were fully disclosed, then the plan sponsor would internalize the costs, thereby eliminating the moral hazard problem. Similarly, the incentive problems created by the

lack of risk-sensitive pricing were at the heart of the savings and loan and bank insurance crisis more than a decade ago, which inflicted massive cost upon the federal government and our society. Economists actually identified the underlying conceptual problem with our deposit insurance system at least a quarter of a century ago. As in many contexts, the current institutional structure does not utilize risk-contingent pricing or disclose to the capital markets a market assessment of the risk cost created by a pension plan and its consequences. The pension insurance context and the form of required corporate disclosures are ones in which economic principles could be used to powerful advantage in my judgment.

Disclosure Requirements

I should be clear that the pension problem spans across the jurisdiction of many portions of the government and that a number of facets of the government can contribute to its solution. Among the entities with important responsibilities in this area are the Pension Benefit Guaranty Corporation, the Securities and Exchange Commission, the Department of Labor, the Internal Revenue Service and of course, the Congress. For example, a number of facets of the current financial disclosure regime for corporate plan sponsors seem particularly problematic to an economist.

The current set of required disclosures does not offer as much clarity as possible to the market for assessing the consequences to the firm of the current contribution decisions, asset allocation policy and plan assumptions. For example, in some instances disclosures reflect the firm's obligations based upon plan termination and in others they are based upon the firm being a going concern. Somewhat analogously, the economic value of a plan's assets should reflect the fair market value of a plan's assets to the extent value is estimated using information on the prices of marketed securities rather than by relying on a smoothed version of the past values of the assets, historical cost, or a projected future rate of return. The current market value of a plan's assets and its asset allocation and not an average of past values can provide all the available information about the ability of a plan's assets to meets its liability obligations. The Off-Balance Sheet Implications Study prepared by the SEC staff[9] pointed to the usefulness of fair-value accounting in a

context in which the fair values are readily identifiable and reflective of the relevant values for decision-making. While the perspective underlying my remarks is based upon the economic structure of pension plans, I recognize that the ultimate responsibility for developing accounting standards rests with the Financial Accounting Standards Board (FASB), which last week announced a major pension initiative. Of course, the appropriate disclosures by firms extend beyond the financial statements to other information material for investors, for example, which could be conveyed through the Management Discussion and Analysis. Yet academic evidence suggests that firms manipulate earnings through their characterizations of pension assets and in support change investment choices.[10].

Risk of Investments

Another important aspect to highlight is that even if a plan is fully funded at present the investment in risky securities creates the potential for the plan to be underfunded in the future. In fact, plan sponsors that follow risky investment strategies will tend to find their plans under-funded.[11] The inability of a sponsor to meets it obligations can reflect either under-funding or poor realizations from a risky investment policy. The investment policy of the pension can affect its assumed rate of return. The obligations of the pension plan are interpreted in our society as riskless, so it seems awkward to assume that the plan will be able to earn a rate of return above the bond return on its assets. In fact, the riskiness of the plan assets suggests that the beneficiaries and guarantor of the plan should view the plans as risky, perhaps reflecting the actual investment policy of the sponsor or even the assumed expected rate of return on plan assets. If the assets are invested in a risky fashion and especially if the plan bears substantial market (aggregate) risk, then it is not surprising that even if the plan is currently fully funded that there is substantial risk of future default.

Of course, this is not to suggest that risky investments should not be undertaken. Indeed, at a macroeconomic level risky investment is essential to our economic success. To the extent that risky assets offer a risk premium, basic portfolio theory suggests that risk-averse investors should hold positive amounts of the risk. However, to the

extent that these assets are held in pension plans there should be an acknowledgement that these add not only to the expected return, but also to the risk that the plan will be unable to meet its obligations, and that plan sponsors are not currently paying a risk-based price for the guarantee that the PBGC provides. If the beneficiaries or sponsors are to benefit from the higher expected returns from assuming risk, then they also should bear the down-side consequences of that higher risk. Furthermore, a more aggressive investment policy in the form of greater equity investment should not allow a firm to reduce its contributions beyond receiving credit for past investment success-if anything, the downside risks are much greater when the pension invests more in equity.

Indeed, for many pricing purposes financial economists use the idea of pricing risky assets by exploiting a hypothetical "risk-neutral" benchmark economy. The substantial risk premium that a manager could earn from bearing underlying risks is not "free" of cost. Yet such costs are essentially ignored under the current standards. While the motivation in the pension context would be quite different, a "risk-neutral" expected return standard would offer a number of advantages such as limiting the plan sponsor's artificial ability to reduce their mandated contribution by assuming an artificially high expected return. Disclosure and funding standards should not allow companies to artificially credit a rate of return that arises solely due to risk and the potential resulting inability to fund one's future commitments.[12] Of course, credit in the funding decision for past success seems appropriate.

Non-Pension Liabilities

One important aspect of a sponsor's retirement liabilities that I have not discussed in detail and which has received comparatively less attention in public policy contexts is the non-pension retirement liability, such as those related to health benefits. These represent significant liabilities to the firm, but the basic economic structure is quite different than that for pension liabilities. Due to the absence of statutory funding requirements and tax benefits to funding health benefits, few assets are set aside for this purpose.[13] At the same time the absence of government insurance in this arena eliminates the incentive issues associated with the pricing of a guarantee. From the

sponsor's perspective these potential unfunded liabilities are quite significant and from a current or future retiree's perspective the associated benefits are inherently quite risky.

Conclusion

As I conclude, I'd like to make a few summary observations. First, the sponsor's ability to terminate a pension plan when the sponsor is in bankruptcy constitutes a valuable option that has a significant impact on the willingness of a sponsor to contribute to a plan and can lead to excessive risk-bearing. Given the substantial values of their pension assets and liabilities, pension issues may even affect the broader strategic, investment and financing choices of some major corporations. These difficulties are reinforced by the absence of risk-contingent pricing of the pension guarantee and contribution standards that do not reflect the underlying economic fundamentals, such as the current market valuation of plan assets. As the savings and loan fiasco of another era should teach us, the potential resource costs of awkward default and risk-bearing incentives in this context are potentially very large. The current disclosures on firm financial statements are inadequate for the capital markets and employees to assess and internalize the true nature of pension liabilities and the extent of funding of these liabilities.

I welcome your questions.

References

Bergstresser, D., M. A. Desai and J. Rauh, 2006, "Earning Manipulation, Pensions Assumptions, and Managerial Investment Decisions," *Quarterly Journal of Economics*, forthcoming, February 2006.

Black, F., 1980, "The Tax Consequences of Long-Run Pension Policy," *Financial Analysts Journal* 36, 21-28.

Dammon, R., J. Poterba, C. Spatt and H. Zhang, 2005, "Maximizing Long-Term Wealth Accumulation: It's Not Just about 'What' Investments to make, but also 'Where' to Make Them," TIAA-CREF Institute *Research Dialogue* Number 85, September 2005, 1-12.

Dammon, R., C. Spatt and H. Zhang, 2004, "Optimal Asset Location and Allocation with Taxable and Tax-Deferred Investing," *Journal of Finance* 59, 999-1037.

Lowenstein, R., "The End of Pensions," October 30, 2005, *New York Times Magazine*.

Office of Chief Accountant, Office of Economic Analysis and Division of Corporate Finance of the United States Securities and Exchange Commission, 2005, "Report and Recommendations Pursuant to Section 401(c) of the Sarbanes-Oxley Act of 2002 on Arrangements with Off-Balance Sheet Implications, Special Purpose Entities, and Transparency of Filings by Issuers."

Tepper, I., 1981, "Taxation and Corporate Pension Policy," *Journal of Finance* 36, 1-13.

Walsh, M., "How Wall Street Wrecked United's Pension," *New York Times*, July 31, 2005, Section 3, pp. 1, 8.

Endnotes

[1] Of course, as in the savings and loan crisis about 15 years ago, many observers have recognized that the PBGC is providing an implicit federal guarantee by which the shortfalls would be borne by the taxpayers at large.

[2] A recent related discussion in the popular press that emphasizes this theme is Lowenstein (2005).

[3] The desire to terminate substantially under-funded plans may even be at the root of some major corporate bankruptcies.

[4] However, the sponsor is unable to directly withdraw excess funds without incurring substantial tax liability.

[5] An additional exposition describing how investors should locate their holdings between taxable and tax-deferred accounts is given in Dammon, Poterba, Spatt and Zhang (2005).

[6] However, analogously in practice individual investors who have taxable and tax-deferred accounts do not systematically maximize their potential tax arbitrage.

[7] Of course, the allowed contributions also will be influenced by the extent to which the plan is under-funded. This impact on new contributions is opposite of the effect due to the moral hazard.

[8] The extent of default risk would reflect the degree of under-funding and the plan's asset allocation policy.

[9] Office of Chief Accountant, Office of Economic Analysis and Division of Corporate Finance of the United States Securities and Exchange Commission, 2005, "Report and Recommendations Pursuant to Section 401(c) of the Sarbanes-Oxley Act of 2002 on Arrangements with Off-Balance Sheet Implications, Special Purpose Entities, and Transparency of Filings by Issuers."

[10] See, Bergstresser, Desai and Rauh (2006).

[11] A recent press account even points out that this would be an inevitable consequence of a risky investment policy. Walsh, M., "How Wall Street Wrecked United's Pension," New York Times, July 31, 2005, Section 3, pp. 1, 8.

[12] Bergstresser, Desai and Rauh (2006) point to some other interesting aspects of the firm's pension assumptions.

[13] From the perspective of financial economics, it would not be in the sponsor's interest to fund health benefits if it had not already maximized its tax preferenced contributions to its pension plan.

http://www.sec.gov/news/speech/spch111605cs.htm

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